Erbslöh EasyLab

Description

Advantages

- Easy and rapid determination of important analytical parameters to control fermentation and the application of different treatment agents and technical aids.
- An easy-to-handle rapid method to replace conventional analytical chemistry using expensive instruments.

Easy-to-handle rapid test to determine analytical parameters required for process control in grape must and wine:

- **malic acid**
- **volatile acid (acetic acid)**
- **free sulphurous acid**
- **total sulphurous acid**
- **total polyphenols**
- **total acidity**
- **total sugars**
- **yeast-utilizable nitrogen**
- **lactic acid**
- **pH-value**
- **tartaric acid**

EasyLab Application Kit
(WEEE-Reg.-No. DE 70432862)

The Erbslöh EasyLab – the tool for an efficient and reliable process control

The available 11 tests provide the user with a broad spectrum of analytical means, from fermentation control and malo-lactic fermentation control to the determination of free and total sulphurous acid and the determination of the deacidification demand.

Included in the test kit is an instruction manual, practice-orientated and specially conceived for the application in wine. The proceeding of the performance of tests is explained step by step and is also demonstrated by graphic representation.

The EasyLab Application Kit offers supplementary aids and devices for an optimal performance of the EasyLab tests. It contains the necessary equipment for carrying out correct dilutions (measuring flasks and pipettes) as well as for decolorization (activated carbon, filter, funnel). Furthermore it contains the EasyLab application guide with applications, practical information and instructions for the use of the EasyLab.

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Table of individual tests:

EasyLab Test	Application	Measurement range (corresponding dilution!)	Dilution range	Particularities / comments
Äpfelsäure-Test (malic acid)	MLF control, acid spectrum	0.005 – 6.0 g/L	undiluted – 1:100	dilution < 1: 50: decolourisation necessary (red wine)
Freie schweflige Säure (free sulphurous acid)	Check of sulphuring	1.0 – 80 mg/L	maximally 1:2	SO_2 determination without ascorbic acid, reductones
Hefeverwertbarer Stickstoff-Test (yeast-utilizable nitrogen)	Control of nutrient demand	10 – 200 mg/L as free ammonium	up to 1:2, (if required also higher)	reaction in the gas phase, no impact of colour or cloudiness
pH-Test	Parameter for orientation	2.0 – 7.0	undiluted	red wine: dilution 1:10 necessary
Gesamt schweflige Säure (total sulphurous acid)	Check of sulphuring	10 – 320 mg/L	maximally 1:2	application only in white wine (colour)
Gesamtsäure-Test (total acidity)	Deacidification demand	2.0 – 14.0 g/L	undiluted	red wines also without sample preparation
Gesamtpolyphenole (total polyphenols)	Parameter for orientation	100 – 4000 mg/L	1:5 - 1:20	red wine: dilution minimally 1:10 (colour)
Gesamtzucker-Test (total sugars)	Fermentation control, residual sugar	0.65 – 65 g/L	1:10 – 1:100	strongly coloured red wines: decolourisation necessary
Milchsäure-Test (lactic acid)	MLF control	0.1 – 6.0 g/L	1:100	observe dilution: otherwise possible disturbance by foreign matter
Weinsäure-Test (tartaric acid)	Deacidification, acid spectrum	0.5 – 5.0 g/L	undiluted	strongly coloured red wines: decolourisation necessary
Flüchtige Säure (volatile acid / (acetic acid)	Microbial spoilage sensory evaluation	0.2 – 2.0 g/L	1:5	integrated volatile acid correction

The indicated ranges of measurement follow practice-related values, dilution factors are adapted accordingly. For some individual tests (e.g. lactic acid) a basic dilution is necessary to eliminate interfering factors, for others (malic acid, total sugars), the necessary dilution results from the sensitivity of the tests. The exact observance of the given dilution factors and other indications is crucial for the accuracy of the measured values. For making dilutions, the use of deionized water is recommendable to achieve optimal precision but also tap water of controlled standard can be used.

The tests in detail according to fields of application:

MLF control: EasyLab-Tests Äpfelsäure / Milchsäure (malic acid / lactic acid):

The employment of these tests makes it possible to control malo-lactic fermentation (MLF), i.e. the conversion of malic acid to lactic acid by lactic acid bacteria. Provided malic acid is completely converted, about 1 g lactic acid is formed of 2 g malic acid. Thus the end point of MLF can be reliably determined and adequate measures can be taken at the optimal moment of time (e. g. racking, sulphuring).

Acid spectrum: EasyLab-Tests Gesamtsäure / Weinsäure (total acidity / tartaric acid):

By means of this test (probably supplemented by the malic acid test), the necessary deacidification measures are determined and controlled. By a differentiated analysis of the acidic spectrum, the choice of the appropriate process (MLF, fine, standard or double-salt deacidification) is facilitated.

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Sulphuring: EasyLab-Tests freie / gesamte schweflige Säure (free / total sulphurous acid):

The determination of free sulphurous acid (free SO_2) is an indispensable instrument of the vinification process control in the cellar. The EasyLab-Test is the only measurement technique applicable in practice by which free SO_2 is directly determined without labour-intensive difference analysis of ascorbic acid or reductones. The observance of legally allowed limiting values can be controlled by measurement of total SO_2 (at the moment application is possible only in white wine).

Fermentation control, residual sugar: EasyLab Gesamtzucker-Test (total sugars):

This test selectively analyses fermentable sugar (glucose and fructose). This means, it can be used for fermentation control (check of completion of fermentation) as well as for adjustment of residual sugars with unfermented grape juice or partly fermented grape must for sweetening, or rectified grape must concentrate. In appropriate dilution also grape juices can be analysed for their sugar contents.

Further applications / tests:

EasyLab pH-Test:

Knowing the pH-value is very important for vinification processes. The activity/efficiency of SO_2 and thus stability in microbiological respect depend very much on the pH. The pH-value equally affects acid buffering off, consequently sensory impression of acidity. With the EasyLab-Test an easy and accurate pH determination is possible. The calibration of a pH-meter is unnecessary.

EasyLab Hefeverwertbarer Stickstoff-Test (yeast-utilizable nitrogen-ferm-N):

The determination of the yeast-utilizable/assimilable nitrogen enables to assess the nutrient situation in the grape must/juice and therefore offers the basis for a targeted employment of yeast nutrient preparations. For a specific evaluation of the nutrient demand two values are measured: FN1 is the free ammonium content (content of ammonium salts), being the basic nitrogen source, FN2 additionally measures yeast-utilizable nitrogen from amino acids, i.e., the sum of free ammonium and yeast-utilizable/assimilable nitrogen derived from amino acids (ferm-N-value) - equally expressed as ammonium - are determined. Knowing both values means being in a position to specifically select the suitable nutrient preparation.

EasyLab Gesamtpolyphenole (total polyphenols):

According to the method of Folin-Ciocalteau total polyphenols are determined as sum-total. For white wines, the measured values are an indication to grape quality, i.e. soundness of grapes, the time of grape harvesting, grape stress during the processing of the grapes. Moreover mash/crushed grapes rest periods, reductive and oxidizing treatments have an impact on the total polyphenol content.
In red wines the measurement of polyphenols, above all, enables to compare the different extraction methods (fermentation on skins or grape mash heating). Yet a measurement does not replace the sensory evaluation of the products.

EasyLab Flüchtige Säure / Essigsäure (volatile acid / acetic acid):

With this test it is possible to determine acetic acid as single substance or the sum of volatile acids, relevant for the evaluation of wine. Calibration is made via separate barcode strips which take into account the influence the composition of wine and fruit juice constitutes. Thus conclusions can be drawn from microbial contaminations still before these can have an impact on sensory evaluation or before limiting values are reached.

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